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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/355,987	11/18/99	BARRESI J	6224/JCK

IM62/0323

JOHN C KERINS
KERKAM STOWELL KONDRACKI & CLARKE
5203 LEESBURG PIKE
TWO SKYLINE PLACE SUITE 600
FALLS CHURCH VA 22041

EXAMINER	
COMBS, J	
ART UNIT	**PAPER NUMBER**
1742	6
DATE MAILED:	03/23/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/355,987	Barresi et al.
Examiner	**Group Art Unit**
Janelle Combs Morillo	1742

☒ Responsive to communication(s) filed on *Nov 18, 1999*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-20* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-20* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials.

The ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials teaches that cast aluminum alloy 356.0 has a composition comprising: 0.20-0.45% Mg, 6.5-7.5% Si, and 0.6% max. Fe (page 164), which overlaps the composition as presently claimed in claims 1, 4, 5, and 15. Said alloy is typically solution heat treated at 535-540°C for 8-12 hours, quenched in hot water (~ 65-100°C), and aged at 150-230°C for 2-9 hours (Table 36, page 168), which are substantially the same process steps as presently claimed in claims 12, 13, 14, 19, 20.

The ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials teaches that cast aluminum alloy 357.0 has a composition comprising: 0.45-0.6% Mg, 6.5-7.5% Si, and 0.15% max. Fe (page 166), which overlaps (or touches the boundary) of the composition as presently claimed in claims 1, 4, 5, and 15. Said alloy is typically solution heat treated at 540°C for 8 hours, hot water quenched, followed by aging ~ 170°C for 3-5 hours (page 166), which are substantially the same process steps as presently claimed in claims 12, 13, 14, 19, 20.

The prior art does not teach the solidification rate of the casting or what phases are present as the result of the above mentioned process steps. The examiner asserts that it is well known to one of ordinary skill in the art to solidify castings at rapid rates in order to produce a high quality casting with small DAS, as shown by the ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials on page 133. Therefore, it would have been obvious to one of ordinary skill in the art to solidify said aluminum casting at "intermediate" to "high" (as defined in the specification page 9 lines 8-18) solidification rates in order to produce a high quality casting with small DAS. The prior art does not teach what phases are present in the final (and intermediate) aluminum alloy processed as stated above. However, the present specification states that "solution treatment at 540°C for 2 or more hours produced desired levels of transformation of π to β phase" (page 8 lines 13-15), which is substantially the same as the solution heat treatment steps of the prior art. The examiner asserts that because the prior art discloses substantially the same aluminum alloy processed in substantially the same

steps, substantially the same product would result as presently claimed. Absent evidence to the contrary, it is held the ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials has created a prima facie case of obviousness of the presently claimed invention.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JA53-16312 or GB 595,531 in view of the ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials.

JA53-16312 teaches an aluminum alloy comprising 6-8% Si, 0.2-0.4% Mg, and 0.001-0.15% Fe, which overlaps (or touches the boundary) of the composition as presently claimed in claims 1, 4, 5, and 15. Said alloy is processed through the steps comprising: casting, solution heat treating 545-555°C for about 9 hours, quenching in 70°C hot water, and aging at ~130°C for 4 hours (see abstract), which are substantially the same process steps as presently claimed in claims 12, 13, 14, 19, 20.

GB 595,531 teaches an aluminum alloy comprising: 3.25-7.0% Si, 0.02-3% Mg, and 0.01-1.8% Fe, which overlaps the composition as presently claimed in claims 1, 4, 5, and 15. Said alloy is processed through the steps comprising: casting, solution heat treating at 480-560°C, quenching in water, and aging at 100-250°C for 1-24 hours (page 2 lines 78-82), which are substantially the same process steps as presently claimed in claims 12, 13, 14, 19, 20.

The prior art of GB 595,531 and JA53-16312 do not teach the solidification rate of the casting or what phases are present as the result of the above mentioned process steps. However,

the ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials, as stated above, teaches the solidification of castings at rapid rates in order to produce high quality castings with small DAS (p 133). The prior art does not teach what phases are present in the final (and intermediate) aluminum alloy processed as stated above. However, the present specification states that "solution treatment at 540°C for 2 or more hours produced desired levels of transformation of π to β phase" (page 8 lines 13-15), which is substantially the same as the solution heat treatment steps of the prior art.

Therefore, it would have been obvious to one of ordinary skill in the art to solidify said aluminum casting (of composition given by JA53-16312 or GB 595,531 or ASM Handbook: Vol. 2) at "intermediate" to "high" (as defined in the specification page 9 lines 8-18) solidification rates in order to produce a high quality casting with small DAS, as taught by ASM Handbook: Vol. 2. The examiner asserts that because the prior art discloses substantially the same aluminum alloy processed in substantially the same steps, substantially the same product would result as presently claimed.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs- Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Prince Willis, can be reached on (703) 308-3050. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

GEORGE WYSZOMIERSKI
PRIMARY EXAMINER
GROUP ~~1100~~ 1700

JCM

March 21, 2000